



Varme Energy Inc.

Heartland Waste-to-Energy Facility

May 2, 2025

Alberta Utilities Commission

Decision 29820-D01-2025

Varne Energy Inc.

Heartland Waste-to-Energy Facility

Proceeding 29820

Application 29820-A001

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Contents

1	Decision summary.....	1
2	Application	1
3	Findings.....	2
3.1	Will noise impacts from the project be compliant with Rule 012: <i>Noise Control</i> ?	2
3.2	Are there environmental concerns with the project?	3
3.2.1	Has Varne properly considered the Alberta Wetland Mitigation Directive in siting this project?	3
3.2.2	Are there any impacts to the air quality in the region due to the project?	4
3.3	Will there be a suitable reclamation security program in place?	5
4	Decision	6
	Appendix A – Summary of Commission conditions of approval in the decision	7

List of figures

Figure 1.	Proposed Heartland Waste-to-Energy Facility location	2
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1 Decision summary

1. In this decision, the Alberta Utilities Commission approves an application from Varme Energy Inc. to construct and operate the Heartland Waste-to-Energy Facility.

2 Application

2. Varme Energy Inc. applied to the Commission for approval to construct and operate the 19.6-megawatt (MW) Heartland Waste-to-Energy Facility, within the Industrial Heartland Designated Industrial Zone.

3. The project will consist of a single steam turbine generator (model SAC2-10) with a total generating capability of 19.6 MW. Two 2.5-MW CAT G3520 natural gas-fired emergency generators will be used to provide limited backup power to the facility during startup and in the event of electrical power failures. The power plant will be fuelled by approximately 205,000 tonnes per year of municipal solid waste obtained from the City of Edmonton. It will typically produce 16.2 MW at the generator terminals, with 5.8 MW exported to the Alberta Interconnected Electric System and the remaining 10.4 MW supplied to the facility's carbon capture package.

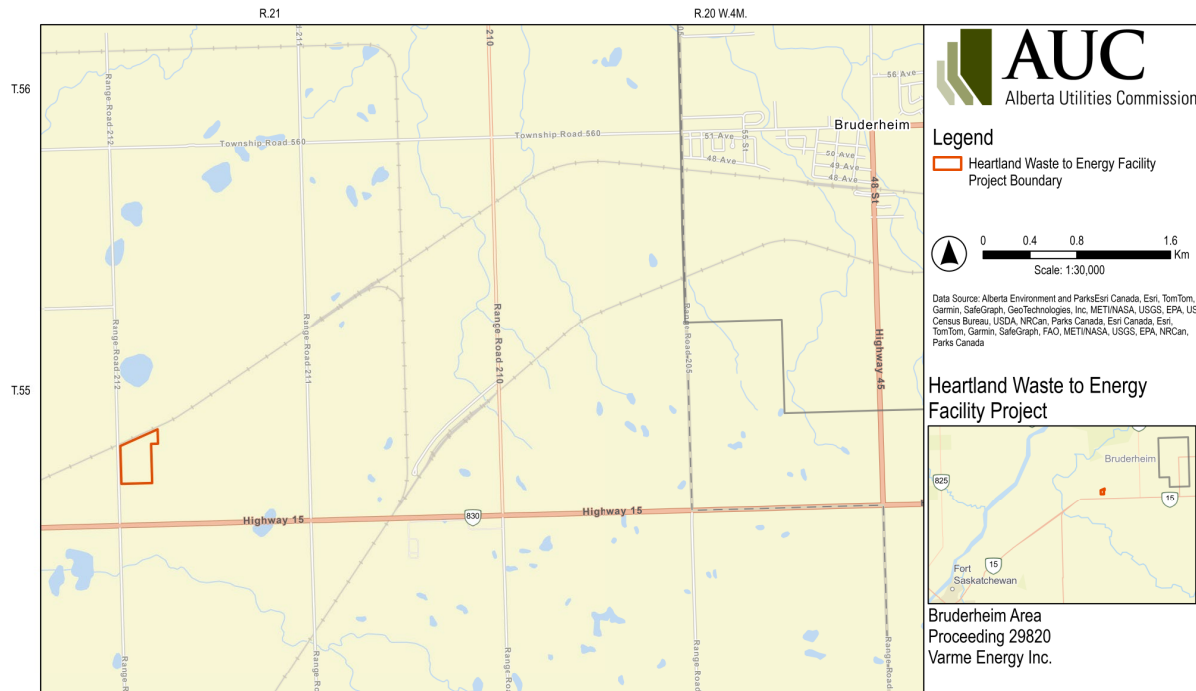
4. The power plant will connect to FortisAlberta Inc.'s distribution line 638L that emanates from AltaLink Management Ltd.'s Amelia 108S substation. Varme stated that it will apply for a connection order by Q1 of 2026.

5. The project will be located in Strathcona County, five kilometres southwest of the town of Bruderheim and seven kilometres northeast of the city of Fort Saskatchewan, Alberta, more specifically within legal subdivisions 4 and 5 of Section 26, Township 55, Range 21, west of the Fourth Meridian. A map of the project area is included in Figure 1 for reference.

6. The Commission issued a notice of application in accordance with Rule 001: *Rules of Practice*. No submissions were received in response to the notice.

7. Varme expects to commence construction in Q3 of 2025 with an expected construction completion date by Q4 of 2027 and an in-service date in Q2 of 2028.

Figure 1. Proposed Heartland Waste-to-Energy Facility location



3 Findings

8. For the reasons below, the Commission finds that approval of the project is in the public interest having regard to its social, economic, environmental and other effects.

9. The Commission reviewed the application and has determined that the information requirements specified in Rule 007: *Applications for Power Plants, Substations, Transmission Lines, Industrial System Designations, Hydro Developments and Gas Utility Pipelines*, Rule 012: *Noise Control* and the interim information requirements in Bulletin 2024-25 have been met.

10. The Commission finds that Varmer's participant involvement program satisfies the requirements of Rule 007. The participant involvement program included notification and consultation with applicable landowners, occupants, residents and other interested parties who might be directly or adversely impacted by the proposed facility. Varmer stated that no nearby First Nation reserves or Metis Settlements were identified.

3.1 Will noise impacts from the project be compliant with Rule 012: *Noise Control*?

11. Varmer retained Acoustical Consultants Inc. (ACI) to conduct a noise impact assessment (NIA) for the project. The project is located within the Northeast Capital Industrial Association (NCIA) region, where noise from energy-related facilities is managed by NCIA's regional noise management plan (RNMP). ACI explained that in the NCIA region, the noise levels from existing regulated industrial noise sources at some receptors already exceed the permissible sound levels (PSLs) as set out in Rule 012. ACI described that the generally accepted methodology for NIAs at NCIA facilities is to ensure that the noise levels from the proposed

project alone (i.e., without taking into consideration the existing facilities in the NCIA region) will be compliant with the Rule 012 PSLs.

12. Based on the predicted results in the NIA, the Commission finds that cumulative sound levels¹ are compliant with the Rule 012 PSLs at all receptors except R01. The predicted cumulative sound level at R01 exceeds the nighttime PSL but the exceedances were attributed to the fact that the corresponding baseline sound levels already exceed the nighttime PSL. At R01, sound level increase resulting from the proposed project is no greater than 0.4 decibels (dB) above the baseline case. In addition, the NIA predicted that noise levels from the proposed project alone in combination with ambient sound levels will be compliant with the PSLs at all receptors.

13. The Commission acknowledges that the project would be located within the NCIA region and noise from energy-related facilities is managed through NCIA's RNMP under Section 2.7 of Rule 012. The RNMP is recognized and approved by the Alberta Energy Regulator and endorsed by the Commission. In its endorsement of the RNMP, the Commission required that in circumstances where meeting the Rule 012 PSLs is not effective, new facilities should result in no net increase above baseline case sound levels at nearby receptors (i.e., increase in sound level above the baseline case should be no greater than 0.4 dB).²

14. The Commission finds that the project NIA meets the requirements as specified in the Commission's endorsement letters for the NCIA's RNMP and accepts that noise from the project is expected either to comply with the Rule 012 PSLs, or to meet the no net increase requirement for the NCIA's RNMP.

3.2 Are there environmental concerns with the project?

15. The Commission finds that overall, the environmental impacts from the project will be limited because the project has been sited in an area of existing disturbance within a landscape substantially impacted by industrial development (Industrial Heartland Designated Industrial Zone).³ The Commission's limited concerns relate to two specific environmental issues: wetlands and air quality.

3.2.1 Has Varne properly considered the Alberta Wetland Mitigation Directive in siting this project?

16. The Commission's wetland considerations are related to how Varne considered the *Alberta Wetland Mitigation Directive*⁴ in siting the project and the wetland impacts that have been identified with this siting.

¹ Cumulative sound levels are calculated as the sum of baseline sound levels and noise levels from the project, while baseline sound levels are calculated as the sum of ambient sound levels and noise levels from the existing facilities that have potential to influence sound levels at receptors.

² Letter from Alberta Utilities Commission to Northeast Capital Industrial Association, issued on September 16, 2013; Letter from Alberta Utilities Commission to Northeast Capital Industrial Association, issued on October 16, 2013.

³ Exhibit 29820-X0001, Thermal Power Plant Application Form, PDF page 2.

⁴ Government of Alberta. 2018. Alberta Wetland Mitigation Directive. Water Policy Branch, Alberta Environment and Parks. Edmonton, Alberta. <https://open.alberta.ca/dataset/2e6ebc5f-3172-4920-9cd5-0c472a22f0e8/resource/62b9a6ce-1d5a-4bc8-832e-c818e3e65410/download/alberta-wetland-mitigation-directive-201812.pdf>.

17. Varme communicated that:

- the project was designed to be as small as possible to minimize and avoid impacts to wetlands,⁵ similarly,
- siting the project within the Industrial Heartland Designated Industrial Zone inherently limits the project impacts on wetlands that are more intact that might be located outside of this industrial zone,⁶ and, finally,
- wetland compensation would be paid to offset wetland impacts that could not be avoided.⁷

18. The Commission accepts these submissions and finds that they are in alignment with the *Alberta Wetland Mitigation Directive*.

19. The Commission is satisfied that upon receipt of required provincial approvals under the *Water Act*, Varme will have met its environmental obligations for wetlands under Rule 007. The Commission notes that Varme is responsible for fulfilling the requirements of all other agencies with jurisdiction over the project. To support the interdependence of project requirements and related approvals, the Commission imposes the following condition of approval:

- a. Varme shall file the final Alberta Environment and Protected Areas' (AEPA) *Water Act* approval with the Commission when available and will include the Wetland Assessment Impact Report submitted to AEPA.

3.2.2 Are there any impacts to the air quality in the region due to the project?

20. The Commission's air quality considerations relate to how the project's emissions would contribute to the overall air quality in the region.

21. Varme submitted an air quality assessment report that predicted the expected impact of the project on regional air quality.⁸ The Commission understands that because the project uses municipal waste as the source of fuel, some of the routine air emission standards are not applicable and site-specific emission limits are subject to discussion with AEPA⁹ during the *Environmental Protection and Enhancement Act* approval process.

22. The air quality report indicates that the *Alberta Ambient Air Quality Objectives* are met within the modelled area except for the maximum ground-level concentrations for fine particulate matter (PM_{2.5}) and sulphur dioxides (SO₂) as modelled for the 24-hour cumulative case (i.e., the predicted maximum emissions for a day that includes all nearby sources).¹⁰ The Commission accepts that these exceedances are the cumulative result of both the project and nearby emission sources. The isopleth figures indicate the locations of the maximum

⁵ Exhibit 29820-X0022, Varme Energy Inc. - response to information request round 1 - Varme-AUC-2025-MAR07-001 to 004, PDF page 4.

⁶ Exhibit 29820-X0022, Varme Energy Inc. - response to information request round 1 - Varme-AUC-2025-MAR07-001 to 004, PDF page 4.

⁷ Exhibit 29820-X0022, Varme Energy Inc. - response to information request round 1 - Varme-AUC-2025-MAR07-001 to 004, PDF page 4.

⁸ Exhibit 29820-X0006.01, TP17 - Air Quality Assessment.

⁹ Exhibit 29820-X0001, Thermal Power Plant Application Form, PDF page 10.

¹⁰ Exhibit 29820-X0006.01, TP17 - Air Quality Assessment, PDF page 26.

ground-level concentration for PM_{2.5} and SO₂ are distant from the project stack.¹¹ The Commission accepts that this project is located in an area of concentrated emission sources, that this siting is desirable compared to alternative locations outside of this industrial zone, and the Commission finds that the specific evaluation of the project emission limits by AEPA is of particular importance.

23. The Commission is satisfied that upon receipt of required provincial approvals under the *Environmental Protection and Enhancement Act*, Varme will have met its environmental obligations for air quality under Rule 007. Similar to the interdependence of requirements and related approvals acknowledged in the wetland section above, the Commission imposes the following condition of approval:

- b. Varme shall file the Alberta Environment and Protected Areas' final *Environmental Protection and Enhancement Act* industrial application approval with the Commission when available.

24. Varme stated that the carbon capture and process water recycling components of the project are incorporated in relevant regulatory applications for the project (i.e., *Environmental Protection and Enhancement Act* approval, *Water Act* approval for wetland disturbance, and Strathcona County Development Permit). These components are situated within the project boundary and will be constructed concurrently with the waste management and power plant components. Varme stated that the carbon capture, process water recycling, waste management and flue gas treatment system, along with other related components, will all be regulated under one *Environmental Protection and Enhancement Act* approval.

3.3 Will there be a suitable reclamation security program in place?

25. The Commission expects applicants to fully reclaim projects and to bear the costs of doing so. Applicants are required to explain how they will ensure that sufficient funds are available at a project's end of life to cover the cost of decommissioning and reclamation.

26. Varme confirmed that the project reclamation security to be provided to AEPA is in accordance with the *Waste Control Regulation*. Varme is legally required to carry out reclamation of all project components. This legal obligation will be incorporated in the *Environmental Protection and Enhancement Act* approval conditions of the project.

27. The financial security to be provided to AEPA is estimated at \$889,455.03, with the final amount to be determined by AEPA. Varme added that the estimated salvage value of the project, derived from equipment salvage and resale, is not included in the financial security estimate provided to AEPA. However, Varme states that the salvage value would already cover a significant portion of the estimated reclamation costs for the project. It therefore concluded that the financial security that will be held by AEPA until the end of life for the project will be sufficient to reclaim the project including all of the power plant components. Varme confirmed that it will comply with financial security requirements in accordance with the *Environmental Protection and Enhancement Act* approval, once issued.

28. The Commission finds that Varme's approach to reclamation for the project is sufficient for the purposes of satisfying the Commission that approval of the project is in the public

¹¹ Exhibit 29820-X0006.01, TP17 - Air Quality Assessment, PDF pages 39 and 45.

interest. AEPA will administer the reclamation requirements for returning the entire site to a pre-disturbance state at the end of the project's life and the Commission expects Varne to comply with requirements and legislation administered by AEPA in this regard.

29. The Commission's approval of the application is solely for the electrical components that comprise the power plant equipment. The Commission has no approval authority over the carbon capture and process water recycling components of the project.

30. The Commission considers the application to be in the public interest in accordance with Section 17 of the *Alberta Utilities Commission Act*.

4 Decision

31. Pursuant to sections 11 and 19 of the *Hydro and Electric Energy Act*, the Commission approves Application 29820-A001 and grants Varne Energy Inc. the approval set out in Appendix 1 – Power Plant Approval 29820-D02-2025 to construct and operate the Heartland Waste-to-Energy Facility.

32. The appendix will be distributed separately.

Dated on May 2, 2025.

Alberta Utilities Commission

(original signed by)

Kristi Sebalj
Vice-Chair

Appendix A – Summary of Commission conditions of approval in the decision

This section is intended to provide a summary of all conditions of approval specified in the decision for the convenience of readers. Conditions that require subsequent filings with the Commission will be tracked as directions in the AUC's eFiling System. In the event of any difference between the conditions in this section and those in the main body of the decision, the wording in the main body of the decision shall prevail.

The following are conditions of Decision 29820-D01-2025 that require subsequent filings with the Commission and will be included as conditions of Approval 29820-D02-2025:

- a. Varne shall file the final Alberta Environment and Protected Areas' (AEPA) *Water Act* approval with the Commission when available and will include the Wetland Assessment Impact Report submitted to AEPA.
- b. Varne shall file the Alberta Environment and Protected Areas' final *Environmental Protection and Enhancement Act* industrial application approval with the Commission when available.